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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/878,321      | 06/12/2001  | Jin Yeal Choi        | K-0293              | 2126             |

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[REDACTED] EXAMINER

DONG, DALEI

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2875     |              |

DATE MAILED: 11/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|  |                        |                  |
|--|------------------------|------------------|
| <b>Office Action Summary</b>   | Application No.        | Applicant(s)     |
|  | 09/878,321             | CHOI, JIN YEAL   |
|  | Examiner<br>Dalei Dong | Art Unit<br>2875 |
| -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  |                        |                  |
| <b>Period for Reply</b>  |                        |                  |
| A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  |                        |                  |
| <ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> <li>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</li> </ul>   |                        |                  |
| <b>Status</b>  |                        |                  |
| <p>1)<input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>12 June 2001</u>.</p> <p>2a)<input type="checkbox"/> This action is FINAL.                    2b)<input checked="" type="checkbox"/> This action is non-final.</p> <p>3)<input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11, 453 O.G. 213.</p>  |                        |                  |
| <b>Disposition of Claims</b>   |                        |                  |
| <p>4)<input checked="" type="checkbox"/> Claim(s) <u>1-3</u> is/are pending in the application.</p> <p>4a) Of the above claim(s) _____ is/are withdrawn from consideration.</p> <p>5)<input type="checkbox"/> Claim(s) _____ is/are allowed.</p> <p>6)<input checked="" type="checkbox"/> Claim(s) <u>1-3</u> is/are rejected.</p> <p>7)<input type="checkbox"/> Claim(s) _____ is/are objected to.</p> <p>8)<input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.</p>   |                        |                  |
| <b>Application Papers</b>  |                        |                  |
| <p>9)<input checked="" type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10)<input checked="" type="checkbox"/> The drawing(s) filed on <u>12 June 2001</u> is/are: a)<input checked="" type="checkbox"/> accepted or b)<input type="checkbox"/> objected to by the Examiner.</p> <p style="margin-left: 20px;">Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p>11)<input type="checkbox"/> The proposed drawing correction filed on _____ is: a)<input type="checkbox"/> approved b)<input type="checkbox"/> disapproved by the Examiner.</p> <p style="margin-left: 20px;">If approved, corrected drawings are required in reply to this Office action.</p> <p>12)<input type="checkbox"/> The oath or declaration is objected to by the Examiner.</p>   |                        |                  |
| <b>Priority under 35 U.S.C. §§ 119 and 120</b>   |                        |                  |
| <p>13)<input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</p> <p>a)<input type="checkbox"/> All b)<input type="checkbox"/> Some * c)<input type="checkbox"/> None of:</p> <p style="margin-left: 20px;">1.<input type="checkbox"/> Certified copies of the priority documents have been received.</p> <p style="margin-left: 20px;">2.<input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____.</p> <p style="margin-left: 20px;">3.<input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</p> <p>* See the attached detailed Office action for a list of the certified copies not received.</p> <p>14)<input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).</p> <p>a)<input type="checkbox"/> The translation of the foreign language provisional application has been received.</p> <p>15)<input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.</p> |                        |                  |
| <b>Attachment(s)</b>   |                        |                  |
| <p>1)<input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2)<input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3)<input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .</p> <p>4)<input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .</p> <p>5)<input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6)<input type="checkbox"/> Other: _____ .</p>  |                        |                  |

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The disclosure is objected to because of the following informalities: On page 8, line 2 and on page 9 line 5, the word "form" should be "from".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,040,655 to Mera.

Regarding to claim 1, Mera discloses “a cathode ray tube (hereinafter referred to as a color cathode-ray tube) used for color image display is constituted by a panel unit which is an image screen, a neck unit which holds an electron gun, and a funnel unit which couples the panel unit to the neck unit. In the funnel unit is mounted a deflector which causes an electron beam emitted from the electron gun to scan a fluorescent screen applied to the inner surface of the panel” (column 1, line 11-18). Mera also discloses “the electron gun held in the neck unit is provided with various electrodes such as a cathode electrode, a control electrode, a focusing electrode and an acceleration electrode. The electron beam from the cathode electrode is modulated by a signal applied to the control electrode, and is permitted to impinge on the fluorescent screen after having been imparted with a required sectional shape and energy through the focusing electrode and the acceleration electrode” (column 1, line 18-26). Mera further discloses in Figure 13A-13D “reference numeral 1127 denotes a third grid feeder line and 1128 denotes a fifth grid feeder line. As shown in Figure 13B and 13C, one end 1127a of the third grid feed wire 1127 is fixed to the third grid 113, part of the intermediate portion 1127b is a bent portion 1127c that extends nearly in parallel with a plane perpendicular to the tubular axis, the bent portion 1127c passes through between the back surface of a bead glass 1120 and the wall surface (not shown) in the neck tube within the full length l of the third grid 1113 in the direction of the tubular axis, and the other end 1127d of the feeder wire 1127 is connected to a stem lead that is not shown” (column 8, line 20-31).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,040,655 to Mera.

Regarding to claim 2, Mera discloses "a cathode ray tube (hereinafter referred to as a color cathode-ray tube) used for color image display is constituted by a panel unit which is an image screen, a neck unit which holds an electron gun, and a funnel unit which couples the panel unit to the neck unit. In the funnel unit is mounted a deflector which causes an electron beam emitted from the electron gun to scan a fluorescent screen applied to the inner surface of the panel" (column 1, line 11-18). Mera also discloses "the electron gun held in the neck unit is provided with various electrodes such as a cathode electrode, a control electrode, a focusing electrode and an acceleration electrode. The electron beam from the cathode electrode is modulated by a signal applied to the control electrode, and is permitted to impinge on the fluorescent screen after having been imparted with a required sectional shape and energy through the focusing electrode and the acceleration electrode" (column 1, line 18-26). Mera further discloses in Figure 13A-13D "reference numeral 1127 denotes a third grid feeder line and 1128 denotes a fifth grid feeder line. As shown in Figure 13B and 13C, one end 1127a of the third grid feed

wire 1127 is fixed to the third grid 113, part of the intermediate portion 1127b is a bent portion 1127c that extends nearly in parallel with a plane perpendicular to the tubular axis, the bent portion 1127c passes through between the back surface of a bead glass 1120 and the wall surface (not shown) in the neck tube within the full length l of the third grid 1113 in the direction of the tubular axis, and the other end 1127d of the feeder wire 1127 is connected to a stem lead that is not shown. Thus the third grid feeder wire can serve as a shielding wire. As shown in Figures 13A and 13B, one end 1128a of the fifth grid feeder wire 1128 that connects the third grid 1113 to the fifth grid 1115 is fixed to the third grid 1113, the other end 1128d of the wire 1128 is fixed to the fifth grid 1115, part of its intermediate portion 1128 is a bent portion 1128c that extends nearly in parallel with a plane perpendicular to the tubular axis, the bent portion 1128c is arranged symmetrically to the above bent portion 1127c within the tubular axis interposed between the two bent portions 1127c and 1128c the full length in l in the direction of the tubular axis of the third grid 1113 on a plane perpendicular to the tubular axis, and the bent portion 1128c passes through between the back surface of the bead glass 1120 and the wall surface (not shown) in the neck, in order to obtain the same action as the shielding wire. That is, since the feeder wires 1127c and 1128c are symmetrically arranged on the same plane perpendicular to the tubular axis, and sandwich the tubular axis therebetween, an excellent effect of suppressing the arc discharge over the whole periphery in the neck tube is exhibited compared with those in which the shielding wire is arranged on one side only" (column 8, line 20-53). It would have been obvious to one of ordinary skills in the art at the time the invention was made to have the second feeder wire of Mera directly

connects to the stem pins where either dynamic or static voltage applied thereto and the fifth grid, in order to provide an electron gun in a color cathode-ray tube which can minimize noise, spark, and neck breakage.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 6,040,655 to Mera in view of U.S. Patent No. 3,558,954 to Lilley.

Regarding to claim 3, Mera discloses an electron gun in a color cathode ray tube provided with various electrodes such as a cathode electrode, a control electrode, a focusing electrode and an acceleration electrode. The electron beam from the cathode electrode is modulated by a signal applied to the control electrode, and is permitted to impinge on the fluorescent screen after having been imparted with a required sectional shape and energy through the focusing electrode and the acceleration electrode.

However, Mera does not disclose the other portion of the evasive form is bent at the end of the bead glass. Lilley teaches in Figure 1, "the stem leads 16 are connected by connections (not shown) to the filaments 82, the cathode assemblies 26, the control grids 27, and the screen grids 28. One of the stem leads is connected by a connecting wire 84 to the middle focusing electrode 30" (column 3, line 21-24). In Figure 1, Lilly teaches the bent portion of the connecting wire at the end of the bead glass. It would have been obvious to one of ordinary skills in the art at the time the invention was made have utilize the bent portion of the connecting wire at the end of the bead glass of Lilly for the connecting wire of Mera in order to provide an electron gun in a color cathode-ray tube which can minimize noise, spark, and neck breakage.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art of the connecting wire within the color cathode-ray tube.

U.S. Patent No. 4,485,327 to Misono.

U.S. Patent No. 5,670,841 to Muti.

U.S. Patent No. 5,894,190 to Hirota.

U.S. Patent No. 6,094,004 to Kim

U.S. Patent No. 6,294,865 to Van Der Heijden.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



Sandra O'Shea  
Supervisory Patent Examiner  
Technology Center 2800

D.D.

November 5, 2002